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WILLIAM D. KEARFOTT.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

THE ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXIX. JANUARY, 1918. NO. 1.

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William D. Kearfott.

(Portrait, Plate I.)

William D. Kearfott died suddenly on Monday night, November the 12th, 1917, following an attack of apoplexy. During the ten years from 1902 to 1911 he was an active student of the Microlepidoptera, particularly the family Tortricidae. Previous to that time he had been interested in the Lepidoptera generally.

An indefatigable and keen-eyed collector and a master of technic in the preparation of the small moths he studied, he amassed a very large collection and also received many specimens for determination from the United States and Canada. He also reared and studied the life histories of many of these insects. In addition he was a prolific writer of systematic articles and described many new species, one paper containing 164 species and varieties new to science. He was very clever with the brush and pen and copied many figures from books and made paintings of types in museums for use in his studies. His work was careful and accurate and ranked high. Exception, however, was taken to some of the names he pro-

posed for new Tortricids and substitutes were suggested. Under the title "Microlepidoptera Suggestions" he published a series of valuable directions for pinning, setting, collecting and breeding.

He was a jolly companion in the field and always extended a warm welcome to fellow students visiting his home and inspecting his collection.

Several years ago his eyes failed him for work on these minute insects; he gave up their study; his Tortricidae became the property of the American Museum of Natural History in New York, and Dr. William Barnes, of Decatur, Illinois, obtained his Pyralidae.

Mr. Kearfott was born in Berkeley County, West Virginia, on January 12, 1864, and was the son of Robert and Anna Dunham Kearfott. He was educated in preparatory schools in Richmond and Philadelphia. In his earlier years he was connected with the Morton Poole Company, of Wilmington, Delaware, and the International Navigation Company, of Philadelphia. He was associated also with the Worthington Steam Pump Company and later with the Warren Steam Pump Company. Two years ago he formed the Kearfott Engineering Company. He was considered an authority on his branch of engineering.

His home was at 220 Orange Road, Montclair, New Jersey. He took an interest in local affairs, being a member of the Montclair Club and the Montclair Golf Club.

Mr. Kearfott is survived by his wife, Mary J. Kearfott; a daughter, Marie, and a son, Thornton Kearfott.—HENRY SKINNER.

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Description of a new Species of the Family Cercopidae from Wisconsin (Hem., Hom.).*

By Louis A. Stearns, Alma College, Alma, Michigan.

Philaenus parallelus n. sp.

This species is distinguished readily from the two previously described Nearctic members of the genus; from *spumarius* (Linn.) by its elongate form, parallel-margined elytra and constant color, and from *lineatus* (Linn.) by its larger size and distinctive coloration, namely, a body color of uniform pale yellow, with a conspicuous stripe varying from dark brown to black extending from the anterior margin of the tylus, medially across the vertex and pronotum, and along the suture of the elytra to the apex.

* Extract from monograph of family entitled "The Nearctic Cercopidae" submitted to fulfill thesis requirement for M. Sc. degree at Ohio State University, June, 1917.

Length 8-10 mm.; width 2.5-3 mm. Vertex, length slightly greater than two-thirds width, disc slightly convex, sloping in line with pronotum, medially weakly carinate, laterally depressed, margins between eyes and tylus deeply sulcate and somewhat reflexed; tylus deeply inserted, disc distinctly elevated with depressions lateral to weak median carina, anterior margin rounding-angulate and produced; ocelli placed close to posterior margin of vertex, equidistant from each other and from posterior margin of tylus; front broadly rounded, acutely angled with vertex, inflation a slight curve, disc narrowly flattened in median line.

Pronotum, disc weakly convex, medially weakly carinate, anterior margin broadly rounded, lateral margins short, equalling distance between ocelli, parallel, posterior margin deeply emarginate; elytra coriaceous, twice longer than wide, parallel margined, closely and finely punctate, the punctures setigerous.

Genitalia: *Female*, last ventral segment one half length of preceding, convex; pygofers broad, length equalling combined basal width, outer margins incurved throughout basal third and indented at middle, exceeded by stout ovipositor one-half their length. *Male*, last ventral segment twice length of preceding, convex; plates curved dorsally at nearly right angles to abdomen, long, broad at base, laterally extended here to one-half width of last segment, obtusely notched to one-half basal width at end of basal third, thence tapering to tip as cylindrical processes, black, sparsely clothed with white hairs.

Color: Pale yellow; stripe from anterior margin of tylus, medially across vertex and pronotum, and along suture of elytra to apex, stripe extending from eye across lateral margins of pronotum, following and fading out posteriorly along outer sector of elytron, and sulcate anterior margin of vertex above and below, dark brown to black; front with disc laterally coarsely ribbed with light chestnut-brown.

Described from seven specimens collected in Wisconsin and received through the kindness of Mr. D. M. DeLong. Three male specimens collected at "Medina, Wisc., 8-23-16" were swept from sedges at the edge of a tamarack swamp; one male and three female specimens collected at "St. Croix Falls, Wisc., 8-15-16," on the St. Croix River, were swept from similar sedges in a swampy hollow in the State Forest Park Reserve. Neither of these localities had ever undergone cultivation apparently. Type, ♀, St. Croix Falls, in author's collection; paratypes in collections of Prof. Herbert Osborn and Mr. D. M. DeLong, Ohio State University, Department of Entomology, Columbus, Ohio.

A Generic Assignment of Three North American Species of Dermaptera.[1]

By MORGAN HEBARD, Philadelphia.

LABIIDAE.

LABIINAE.

Barygerax auricoma (Rehn).

1903. *Labia auricoma* Rehn[2], Ent. News, XIV, p. 292. [♀; Piedras Negras, Costa Rica, (Schild and Burgdorf).]

This insect differs strikingly from the genotype, *B. esau* Hebard, in the decidedly smaller eye and similar but less strikingly flattened-moniliform antennal joints. The forceps are much heavier and shorter in *auricoma,* but as *esau* is known only from a male and the present species from a female, we are unable to determine the degree of difference in this feature for the same sex in each species.

The following features are noted for the type. Head blackish brown; eyes small, one-third as long as cheek. Antennae with first joint three and one-half times as long as basal width; second minute, not as long as broad; third slender, about twice as long as broad; fourth and fifth joints heavier, appreciably longer than broad; succeeding joints flattened bead-like, submoniliform, the longest twice as long as broad. Pronotum yellowish, about as long as broad, caudal margin evenly convex. Tegmina broad, convex, ample, leaving only the extreme tips of the wings projecting, much as in *esau*; tegmina and wings bluish black. Abdomen and limbs yellowish, discolored. Forceps reddish yellow, very short and heavy; length twice basal width; showing a short median flange dorso-proximad as in *esau.*

Barygerax breviforceps (Caudell).

1907. *Labia breviforceps* Caudell, Proc. U. S. Nat. Mus., XXXIII, p. 174. [♀; mouth of Rio Dulce, two miles from Livingston, Guatemala, May 5, 1906, (H. S. Barber).]

This species differs widely from both *B. esau* and B. *auricoma* in its buffy general coloration, tegmina similarly elongate but narrower, with costal and sutural margins parallel

[1] It was intended to include the study of these forms in a recent paper by the author, "Dermapterological Notes," Proc. Acad. Nat. Sci. Phila., 1917, pp. 231-250, but as the loan of types from the National Museum was not granted, the examinations were not made until a visit to that institution was possible, where the material discussed here was examined.

[2] Assigned with a query to *Prolabia* by Burr in the *Genera Insectorum.*

and more projecting wings. The size of the eye and length of forceps agree closely with *csau*, but the very different type of tegmina and wings may compel generic separation of the present species when more material of this group has been secured. Whereas *csau* and *auricoma* have a similar general appearance, the present insect has a decidedly different facies, due largely to the coloration and form of tegmina and wings.

The following features are noted for the type. Entire insect buffy; head, median portion of pronotum, exposed surface of wings and abdomen suffused with brown. Forceps tinged with reddish brown. Eyes of moderate size, as long as cheek. Pronotum appreciably longer than broad, lateral margins very feebly diverging caudad, straight, with a few microscopic bristles and a larger bristle at the latero-cephalic angle. Tegmina elongate, sutural and costal margins parallel, distal margin feebly convex and feebly produced toward costal margin, truncate. Wings extending moderately beyond tegmina a distance nearly equal tegminal width. Forceps short, heavy, about two and three-quarters times proximal width, general form much as in *auricoma*. Head, pronotum and tegmina moderately well supplied with minute microscopic hairs, exposed surface of wings and abdomen heavily supplied with these, forceps moderately supplied with the same.

SPARATTINAE.

Sparatta diplatyoides (Caudell).

1907. *Cylindrogaster diplatyoides*[3] Caudell, Proc. U. S. Nat. Mus., XXXIII, p. 170. [♀; Cacao, Trece Aguas, Alta Vera Paz, Guatemala, April 11, 1906, (H. S. Barber).]

It is our opinion that the species is valid. The type female has the forceps and pygidium identical with those of *S. biolleyi* Borelli,[4] except that the forceps are proportionately shorter and these organs in *diplatyoides* are proportionate to its much smaller size; length of body, exclusive of forceps, 7.5; of forceps, 2 mm.

The original description is good. The pygidium was not described; it is quadrate, with lateral margins very feebly concave to the very finely pointed latero-caudal angles, between which the caudal margin is transverse, showing a weak convexity mesad.

[3] This species has been synonymized with a query by Burr in the *Genera Insectorum*, under *Sparatta pelvimetra* Serville, described from Brazil.

[4] Material of both sexes of that species from Costa Rica is at hand.

Studies in the Tenebrionidae (Coleop.).

By Frank E. Blaisdell, Sr., San Francisco, California.

The following new species are based on facts observed in the field, by Messrs. Ralph Hopping and F. W. Nunenmacher respectively.

Coniontis hoppingi n. sp.

Oblong, smooth and shining; black, frequently nigro-piceous; tibiae and tarsi rufo-piceous, antennae and palpi rufous, pubescence minute and inconspicuous.

Head equal to one-half the width of the prothorax, convex between the eyes, vertex rather prominent, finely and sparsely punctate, the punctures frequently denser laterally and on the epistoma; fronto-clypeal suture is more or less evident, and the posterior canthus of the eye is slightly more prominent than the anterior. Antennae extending to a point slightly behind the middle of the pronotum. Epistoma triangularly emarginate with the angles rather narrowly rounded. Setae absent. *Antennae* rather slender, the third joint distinctly twice as long as the second, the fourth to the seventh inclusive, subequal in length and obconical, eighth to the tenth subtriangular, eleventh suboval and smaller.

Pronotum about one-sixth wider than long, base one-third wider than the apex; disk evenly convex, finely and sparsely punctulate, the punctules becoming slightly larger and denser laterally; apex emarginate in circular arc, rather finely beaded, more strongly so laterally; sides subparallel in basal half, thence evenly arcuate to the apex, or more distinctly arcuate to the base, bead rather strong; base as wide as the elytra, emarginate, moderately lobed at the middle third and sinuate laterally; basal angles slightly less than right; apical angles narrowly rounded.

Elytra rather more than one-half to almost one-third longer than wide; sides subparallel, distinctly and rather broadly arcuate in apical third, slightly so in basal two-thirds; apices swollen and reflexed, sub-tuberculate and slightly divergent; disk convex, moderately so on the dorsum, strongly and evenly rounded laterally, with a tendency to a slight inflexion, arcuately declivous posteriorly, sides of the declivity more or less slightly inflated, very finely and at times subobsoletely punctulate, setae only visible under high power. At times there is evidence of eroded grooves, occasionally there are evanescent corrugations.

Propleurae longitudinally rugose and smooth. Prosternal process strongly margined and feebly convex.

Length 14.0-15.5 mm.; width 6.5-7.5 mm.

A series of thirteen specimens collected at Colony Mills, Tulare County, California, elevation 5415 ft., by Mr. Ralph Hopping. *Type* in the writer's collection.

A very distinct species. The tumid or tuberculate, everted and reflexed elytral apices, are unique characters by which the species can be quickly recognized. Under high power the surface of the insect appea ɜ very finely pitted or pseudo-punctulate between the true punctures; the elytral surface is microscopically and densely granulate.

According to Casey's table, the species belongs to the *viatica* group.

The occurrence of eroded grooves and costae on the elytra is atavistic. The crumpling occasionally observed also, may in some individuals of other species of the genus *Coniontis*, amount to rugosities as evident as those of the elytra of *Microschatia inaequalis* Lec.

This form of sculpturing in *Coniontis* is purely anomalous, and can be experimentally produced by puncturing the elytral apodemes immediately after the casting of the pupal skin. The wrinkling is due to shrinkage on account of the loss of tension, which allows the inherent elasticity of the integumentary tissues to act.

The rugulosities in their feeblest form can be also produced by the rapid evaporation of the body fluids immediately after the emergence of the insect from the pupa. These facts explain this form of sculpturing so frequently observed in beetles, and which is to a greater or less extent a fortuitous physiological modification, and one which is usually considered of specific or varietal importance. Its constancy in certain species depends upon the stability of the meteorological conditions of the environment. When these conditions are fitful, the sculpturing is apt to be asymmetrical. *Coelocnemis* presents this condition more or less constantly, both in its symmetrical and asymmetrical state in a certain per cent. of individuals.

The crumpling of the elytra of *Microschatia inaequalis* is inherent and fixed, and is entirely of a different order from that observed in *Coniontis*.

In *hoppingi* it is to be noted that the prosternal process is strongly margined in all of the specimens; but three of them exhibit distinct evidences of the margin becoming obsolete at the apex. In part of the specimens the sides of the prosternal process are parallel and no dilatation occurs behind the coxae; in others the apex is distinctly dilated with the sides arcuate.

Three specimens are perfectly smooth, the others of the series show evidences of incipient crumpling; in four there is evidence of the very slight costae and grooves. Ten of the specimens are oblong with the sides parallel; three show evidence of being cuneate. This form is due to a relative widening of the prothorax and a tendency of the elytra to narrow more or less from base to apex. I am not prepared to say whether this is of one or both sexes.

Two of the specimens are more strongly punctulate, and one is broader behind than in front. In the types the elytral punctuation is finer than that on the pronotum.

The variation exhibited by this small series is characteristic of nearly all the species of *Coniontis,* and should be noted by those who study the genus.

Coniontis globulina, n. var. **muscula.**

Oblong-oval, slightly elongate, black, dull to feebly shining; mouth parts and legs rufous to rufo-piceous; antennae rufous, more or less piceous in distal one-half; pubescence mouse-colored to yellowish, abundant and more or less conspicuous, moderately persistent, not dense, not hiding the general surface, rather less than moderate in length and recumbent.

Head rather small, a little less than one-half the width of the pronotum, finely and sparsely punctate, punctures denser on the epistoma, labrum with thirty to forty sparsely placed punctures; front nearly flat, vertex distinctly convex; anterior canthus less prominent than the posterior and rounded, the latter scarcely more prominent than the posterior margin of the eye. Mentum transverse, almost smooth and obsoletely punctate; apex feebly and broadly emarginate to straight, angles not prominent and rounded. Antennae moderately short and thick, not reaching beyond the basal fourth of the pronotum; outer joints broadened and compressed.

Pronotum transverse, length equal to about three-fifths of the width, evenly and moderately arcuate from side to side, scarcely con-

vex antero-posteriorly; apex almost arcuate in circular arc, middle third of the arcuation somewhat straight; base subtruncate, feebly sinuate laterally; disk almost evenly punctate, punctures slightly larger than those of the elytra; sides feebly arcuate in basal one-half, thence more strongly arcuate to apex, bead moderately fine; apex finely beaded; apical angles well rounded; basal angles subrectangular and somewhat more than narrowly rounded.

Propleura more or less longitudinally rugulose.

Prosternum finely and sparsely punctate; process feebly margined between the coxae; apex rounded, not margined; varying in length and moderately constricted.

Elytra one-half longer than wide, evenly convex from side to side, evenly and arcuately declivous in apical third; apex ogival; sides finely margined; disk somewhat irregularly and rather finely punctate, apical declivity scarcely rugose; there is slight evidence of longitudinal costae or smooth lines.

Epipleura smooth.

Parapleura, meso- and metasterna sparsely punctate.

Abdomen finely and very sparsely punctate, last two segments more strongly punctate.

Metafemora very sparsely and finely punctate; metatarsi slightly shorter than the metafemora.

♂. Form narrower than the females.

Length 7.0-9.5 mm.; width 3.5-4.7 mm.

Type locality—San Joaquin County (San Joaquin Valley), Calif. Collector, F. W. Nunenmacher. *Type* in the writer's collection.

Habitat—Under leaves, cowchips, etc., and running over the ground.

Distribution—California (San Joaquin Valley southward to the Tehachapi Pass).

Remarks—Abundant. Described from a series of one hundred and thirty-five specimens. Several males are distinctly cuneate, others are less so and pass gradually into the normal oblong-oval form.

Muscula is a race of the anomalous *globulina* Casey. Several years ago the writer received from Prof. H. F. Wickham a small series of the latter species, who collected them at the Tehachapi Pass. The series contained the short and stout form described as *globulina* with others that gradually connected the latter with those of a normal *Coniontis*-like form. It is

perfectly evident to the writer that the race *muscula* becomes broader to the northward and narrower to the southward. If the labels were removed from the normal form taken at Tehachapi Pass and mixed with those of the northern form it would be impossible to positively separate them again. The transition is complete from *globulina* to *muscula*. The subgenus *Brachyontis* is without foundation when a large series is studied and the variations noted. Compare the descriptions of *globulina* and *muscula*.

Bibliography.—Casey, Thos. L. A Revision of the Tenebrionid Subfamily Coniontinæ. Proc. Wash. Acad. Sciences, Vol. X, p. 141.

Coniontis montana Casey.

According to Casey's description the salient characteristics of this species are its

"oblong, stout and parallel form, conspicuous fulvous pubescence and dull lustre.

"Length 10.8-13.0 mm.; width 4.9-6.2 mm."

By these characters it can be diagnosed from all of the other species of *Coniontis*. The value of other characters as aids in diagnosis will be considered below. Mr. F. W. Nunenmacher has, by persistent collecting in southern Oregon, northern and northwestern California, amassed a series of forty-five specimens. These, with the results of the writer's own collecting, give a total of eighty specimens, from which the following observations have been made.

Distribution.—The specimens were collected in the following States and counties: California (Calaveras, Alpine, Eldorado, Placer, Sierra, Plumas, Lassen, Shasta and Siskiyou Counties); Oregon (Josephine County.) A smaller series of twelve specimens have been separated as *C. canonica* Casey. These were collected in Klamath County, Oregon; part of these are intermediates between *montana* and *canonica*.

As considerable use has been made of the characters presented by the prosternal process, I shall give the results of an examination of a series taken in the order in which they happen to be placed in the cabinet box, and therefore not selected to prove any preconceived notion.

As the examination progressed the specimens were arranged in the following groups with definitions:

1. Prosternal process longer, horizontal, finely and sparsely punctate, very feebly narrowed between the coxae, distinctly margined at the sides and obsoletely so at the tip, the latter evenly rounded. 1 ♂ and 2 ♀♀.
2. Process just the least convex longitudinally, sparsely punctate, scarcely narrowed between the coxae, distinctly margined throughout; surface distinctly and transversely convex between the marginal sulci, tip evenly rounded. 1 ♀.
3. Process shorter, deeply margined throughout, sparsely, finely and distinctly punctate, longitudinally impressed at middle between the coxae; surface convex behind the impression; tip broadly rounded, narrowed between the coxae as in Group 1. 1 ♀.
4. As in Group 2, but the process is shorter, strongly and more densely punctulate. 1 ♀.
5. Process feebly narrowed between the coxae, distinctly convex longitudinally and noticeably prominent between the coxae, otherwise as in Group 1. 1 ♂.
6. Process not impressed, longitudinally convex; surface convex from side to side between the marginal sulci. Otherwise as in Group 3. 1 ♀.
7. Process longitudinally convex between the coxae, becoming concave behind the coxae, tip gradually deflexed ventrad. Otherwise as in Group 3. 1 ♂.
8. Process shorter yet, just the least convex both ways, strongly margined at the sides, no evidence of a bead at tip; the latter broadly and less strongly rounded. 3 ♂♂.
9. Process distinctly narrowed between the coxae. Otherwise as in Group 2. 1 ♀.
10. Process longer, margin obsolete at tip. Otherwise as in Groups 3 and 7. 1 ♀.
11. As in Group 3, except that the process is longitudinally convex, flat from side to side between the marginal sulci, marginal bead feeble laterally and obsolete at tip. 3 ♀ ♀.
12. Process longitudinally convex, not marginal at tip; surface flat transversely between the marginal sulci. Otherwise as in Group 2. 1 ♀.
13. As in Group 11, except that the process is strongly margined throughout, narrowed between the coxae and with the tip more strongly dilated. 6 ♀♀.

The taxonomical value of the characters presented by the prosternal process is self-evident.

The relative prominence of the canthi cannot be relied upon for taxonomical purposes. The majority of the specimens have the anterior canthi slightly less prominent than the posterior; in a few specimens the anterior are most prominent. Bilateral asymmetry is occasionally observed.

The smallest specimen has the following dimensions: Length, 9.5 mm.; width, 4.3 mm. (♂). The largest specimen measures: Length, 14.0 mm.; width, 6.5 mm. (♀).

It is probable that the *subpubescens* group includes a number of geographical forms that may be described as species or races when studied in large series. Each species and race will have a varying number of intraspecific variants, which should be grouped as *formae*. This is imperative and practical. If not, the continuous founding of so-called species upon these intraspecific variants will in time clog our lists with useless synonyms. There is a crying need for conservatism. In the majority of cases the characters used to define a species have no more value than the variation of the malar prominences, nose, ears, etc., as specific or varietal taxonomical characters in human beings.

Montana is as distinct a species as can be found in the *subpubescens* group. *Canonica* Casey is only a narrower form of *montana*, and thus far observed in the north, namely:—in northern California and southern Oregon. *Montana* is very closely related to *subpubescens*, and when followed southward along the Coast Range of mountains gradually becomes indistinguishable from *subpubescens*, as observed in Marin County, California.

The epistomal sinus is usually subtriangular, but occasionally it becomes broader, less deep and arcuately emarginate. Two specimens from Del Norte County agree in every way with those from Eldorado County, except that the pubescence is shorter and therefore less conspicuous.

In two specimens from Dutch Flat, Placer County, the suture between the episternum and epimeron of the mesosternum is completely obliterated; the two side pieces appearing as one. The specimens are more strongly convex transversely, more oblong, with finer pubescence which is not as long as

usual. In the latter character they resemble those from the Calaveras Big Trees. The pubescence increases in coarseness to the northward. Specimens from Lassen County, California, and Josephine County, Oregon, have the coarsest pubescence and punctuation, and where the narrower form becomes *canonica* Casey.

Specimens with coarse pubescence and punctuation are found among those taken in Eldorado and Calaveras Counties and to the southward; but they are fewer in number than to the northward. The transition from one variant into the other is gradual in all directions, and therefore no limitation can be drawn between them. They are all included under *normal specific variation.* If there are different species or races they must be defined from larval or pupal characters—or from both.

Analogy is found in the series collected on the south fork of the Kaweah River, Tulare County, California, by Mr. Ralph Hopping, whose entire collection of *Coniontis* is before the writer. *Montana* in that region gives a variation—*perspicua* Casey—that is the opposite of *canonica* in form. *Canonica* is narrower, and *perspicua* is much broader than *montana.* In Mr. Hopping's series the specimens gradate so evenly that it is impossible to tell where *montana* ends and *perspicua* begins.

Perspicua and *globulina* are anomalous forms; *canonica* less so. It is unfortunate that *globulina* is a type species, for it is the same as if a dwarf or a hunchback was the type of *Homo sapiens.*

These forms are undoubtedly due to certain physiological conditions induced by environmental phenomenon. Seasonal vicissitudes of unusual stress may be considered as factors in the production of unusual forms, which in all probability revert to the type-form when causative factors cease to operate. Some forms are due to mechanical interference, as when larvae are forced to pupate in places that do not offer sufficient space, for instance, where the cell is short so that the prepupal and pupal stages are under flection stress. It is a question of mechanics.

Moonstones in a Cecropia Cocoon (Lepid.).

By L. O. Howard, Washington, D. C.

I recently received from a Florida correspondent two very beautiful moonstones found in the inner cocoon of a cecropia moth. They are about the same size, and the one measured is 13 x 8 x 9 mm. I remembered the notes in Volume II of the *American Entomologist* (1870) and at once turned to them. In an article on the cecropia moth, on page 100, Doctor Riley states that on the 20th of March, 1867, Mr. J. A. Jackson, of Goodings Grove, Illinois, brought in a cocoon from which the moth had not yet escaped. Enclosed in the cocoon with the chrysalis was a kernel of corn. Doctor Riley thought that the kernel had been accidentally dropped by some bird and had fallen through the meshes of loose silk and lodged while the worm was yet spinning its cocoon. He remarked, "It is one of those singular coincidences which occur once in a lifetime, and we mention it in this connection simply to place the fact on record."

On page 177 of the same volume is a letter from Dr. William LeBaron, dated Geneva, Illinois, February 22, 1870, in which he stated that he had seen the note and that in two instances cocoons had been brought to him for examination by a young man of Geneva, each containing a grain of corn. Doctor LeBaron's explanation was that the corn was deposited in the cocoon for safe keeping during the formation, or possibly forced into the loose end after completion, of the cocoon, by some bird. He suspected the bluejay.

Still later, on page 370 of the same volume, a correspondent, "S. F. C.," wrote, stating that during the fall of '69 he found five cocoons of the cecropia moth, all of which contained kernels of corn or of wheat and in a sixth was a small acorn. He had seen chickadees trying to store grains of corn and wheat, he said, and believed that the chickadee as well as the bluejay used the cocoon of the cecropia moth as a storehouse.

My original correspondent in regard to the moonstones was Dr. W. H. Howell, Mayor of Leesburg. He sent me the inner cocoon of the cecropia moth, cut in half, with two of the moonstones inside. The third, he stated, had been retained. On

writing to Doctor Howell, he placed me in correspondence with the original finder of the cocoon, Mrs. Neal Adams, of Lady Lake, Florida. I wrote her that I had consulted Mr. E. W. Nelson, Chief of the Bureau of Biological Survey of the Department of Agriculture, who had told me that in that part of Florida the bluejay, the Florida jay, the white-breasted and brown-headed nuthatches, the tufted titmouse and red-headed woodpecker all have the habit of storing miscellaneous things. From the size of the moonstones, he suspected the bluejay. I asked her whether any one in her town had a pet crow, as that might have been responsible. I then described the cecropia cocoon, and asked whether this description corresponded with the recollection of the person who found the cocoon. The letter concluded as follows: "The cut moonstones found in its interior, while of no especial value, are very pretty and may have been prized by some one. I know that birds down there with you are apt to be very familiar, and it is not impossible that this especial thief entered a bedroom window and stole the stones from the top of a bureau. It is a very interesting case." Mrs. Adams replied that the cocoon corresponded exactly with my description, and that it was found near her house in the wheel-rut of a new clay road. The outer cocoon had been gashed in some way, but the inner cocoon was opened by her, and there she found the stones. She stated that no one to her knowledge had a pet crow, but that wild crows were numerous, as were the other birds mentioned in my letter.

These moonstones were exhibited at the Entomological Society of Washington and at the Biological Society of Washington in the hope that some of the members might have found or heard of similar instances. At the Entomological Society, Mr. Schwarz stated that he remembered the notes in the *American Entomologist* and that he had an indefinite idea that he had seen something else published on the same subject, but could not particularize. At the meeting of the Biological Society, Mr. Alexander Wetmore said that he had seen bluejays stuff grains of corn and small acorns into "big cocoons."

The note is sent to *Entomological News* in the hope that it may result in a record of observations of a similar nature.

A Key to the Known Species of South Carolina Ants, with Notes (Hym.).

By M. R. Smith, Washington, D. C.

The writer is very much indebted to Dr. W. M. Wheeler, of Harvard University, for the identification of several species given in this paper and also for the use of a number of his notes.

Prof. J. S. Hine and Prof. C. L. Metcalf, of Ohio State University, kindly criticized the paper and offered suggestions.

Key to Subfamilies of Formicidae.

1. Abdominal pedicel consisting of a single segment .....2.
   Abdominal pedicel consisting of two segments .....3.
2. Cloacal orifice terminal, surrounded by a fringe of hairs, CAMPONOTINAE
   Cloacal orifice ventral .....4.
3. Frontal carinae very close together, almost vertical, not covering antennal insertions; eyes small or absent; species tropical and sub-tropical .....DORYLINAE
   Frontal carinae not as above; eyes rarely vestigial or absent; species numerous .....MYRMICINAE
4. No constriction between the first and second gastric segments, anal glands present, which produce a secretion with a rancid butter-like odor .....DOLICHODERINAE
   Gaster with a distinct constriction between the first and second segments; frontal carinae separated or close together, PONERINAE

Subfamily PONERINAE.

Frontal carinae closely approximated; the tip of gaster strongly deflected downard; clypeus with a projection in the middle, . **Sysphincta**

S. pergandei Roger.

This species is a member of the above genus, which was once common to the southeastern part of the United States, but is now nearly extinct. The writer has taken only one specimen during two years of collecting in South Carolina. This specimen is rather ferruginous brown in color, has a thorax without sutures, and the tip of the gaster is deflected downward. The specimen was taken from beneath some pine leaves.

(Subfamily DORYLINAE.)

Claws toothed .....**Eciton**

E. opacithorax Emery.

The workers of this species have vestigial eyes, hence lead hypogaeic or subterranean lives. Specimens were captured while they were trailing over the ground in single file. The species does not seem to be numerous in the northwestern part of the State, the writer only having taken specimens on two different occasions.

Subfamily MYRMICINAE.

1. Postpetiole joined to the dorsal surface of the gaster, which is flattened dorsally, more convex ventrally and acutely pointed. **Cremastogaster**

   Postpetiole joined to the anterior basal portion of the gaster..2.
2. Meso-epinotal constriction usually faint or lacking .....3.

   Meso-epinotal constriction distinct .....4.
3. Antennae 11-jointed; workers monomorphic; head and thorax not rugose .....**Leptothorax** (in part)

   Antennae 12-jointed; meso-epinotal constriction as well as pro-mesonotal constriction absent; the head and thorax distinctly rugose .....**Pogonomyrmex**
4. Antennae 11-jointed .....5.

   Antennae 12-jointed .....6.
5. Head with one pair of occipital spines, thorax with three pairs of dorsal spines; integument rough, bearing stiff or hooked hairs. (*Atta*). (One subgenus in South Carolina, which has numerous tubercles on the head, thorax and abdomen **Trachymyrmex)**

   Thorax and petiole without any traces of teeth or spines; body slender; workers monomorphic .....**Monomorium**
6. Last four joints of the antennae forming a rather distinct club; workers with slender thorax and legs; monomorphic, **Aphaenogaster**

   Last three joints of the antennae forming a club .....7.
7. The club very distinct; the workers strongly dimorphic; soldiers with large heads .....**Pheidole**

   The club not quite so distinct; meso-epinotal constriction deep and distinct; workers monomorphic, **Leptothorax**, sub-genus **Dictothorax** (in part)

   Head and prothorax distinctly striated; pro-mesonotal constriction absent; imported species .....**Tetramorium**

Genus **Cremastogaster** Lund.

1. Workers with distinct mid-dorsal thoracic carina .....2.

   Workers without distinct mid-dorsal thoracic carina, ***victima*** F. Smith subspecies ***missouriensis***

2. Workers with distinct mid-dorsal thoracic carina extending from the center of the pronotum to the center of the mesonotum, *lineolata* Say. var. *lutea*

Workers with a distinct, short, mid-dorsal thoracic carina extending partly or throughout the mesonotum .....*lineolata* Say.

C. victima F. Smith, subsp. **missouriensis.**

This is a small species which may be distinguished by the absence of a mid-dorsal thoracic carina on the workers.

C. lineolata Say, var. **lutea.**

The workers have a distinct mid-dorsal thoracic carina extending from the middle of the pronotum to the middle of the epinotum.

C. lineolata Say.

The workers of this species are very common, ranging throughout all parts of the United States. They build nests under stones, in galls, wood and under carton-like structures. These ants are exceedingly fond of sweets and it is no uncommon occurrence to find them in attendance upon aphids, coccids and similar insects. The workers when disturbed raise the tip of their gaster in a threatening manner as if they could sting.

Genus **Leptothorax** Mayr.

1. Thorax without meso-epinotal constriction; antennae eleven-jointed; color yellow..*curvispinosus* (Subgenus *Leptothorax* s. str.)

Thorax with distinct meso-epinotal constriction; antennae twelve-jointed; color black..*pergandei* (Subgenus *Dictothorax* Emery)

L. curvispinosus Mayr.

The small yellow workers of this species build their nests in hollow limbs, galls, nuts, etc. They are easily identified from other species of this genus by their yellow color and by two black or brown spots on the first gastric segment. The species is very small and may be overlooked by the casual observer.

L. pergandei Emery.

The workers are black and considerably larger than those of *L. curvispinosus*. The habits of the two species are practically the same.

Genus **Pogonomyrmex** Mayr.

P. badius Latr.

This is the only species of the genus that occurs in the southeastern states. Some of the workers have exceedingly large heads. The workers are dark rufous, very hairy, and have a much rugose head and thorax.

Genus **Atta.** Fabr. Subgenus **Trachymyrmex** Forel.

T. septentrionalis McCook.

The workers of this form have a number of tubercles on the body, which gives them a rough spiny appearance. This species cultivates fungus in its nests for food. The nests are open from the first of April to the latter part of May. After this time the heat becomes too intense for the keeping of fungus without the closure of the entrance to the nest. The writer has often observed workers carrying apple blossom petals into their nest for the purpose of cultivating fungus from it. Their nest always has the excavated dirt placed a few inches from the opening in such a manner as to form a crescent. This is very characteristic.

Genus **Monomorium** Mayr.

M. minimum Buckley.

The small, slender black workers of this species occur in the fields and in houses. In the field they build crater-shaped mounds. Often they occur in large enough numbers around houses to be considered pests. The writer has found them nesting in rotten wood.

Genus **Aphaenogaster** Mayr.

1. Antennal scape with a shield-shaped enlargement at the base, *treatae*
   Antennal scape without a shield-shaped enlargement at the base. 2.
2. Femur and tibiae of legs distinctly enlarged and much darker, *lamellidens*
   Femur and tibiae not distinctly enlarged and much darkened.... 3.
3. Head broad, occipital region with distinct lobes; general color dark brown ..... *fulva.*
   Head slender, occipital region with rounded lobes: general color usually light ferruginous brown with gaster and legs yellowish ..... *texana.*
   Workers smaller; epinotal spines shorter and directed more backward; general color brownish; base and tips of gaster paler, *texana,* var. *carolensis.*

A. treatae Forel.

The workers are easily identified by the lobe-like enlargements of their scapes. They are very common throughout the eastern section of the United States. The workers are carnivorous and forage singly. They nest beneath stones in the woods.

A. lamellidens Mayr.

This species has workers which are reddish in color and have much darkened femora and tibiae. The workers have always been captured by the writer on or around wood.

A. fulva Roger.

The workers are dark brown in color and are slender in form. They nest in rotten logs in the woods. This species does not seem to be common in the northern section of the State.

A. texana, var. **carolensis.**

The workers are hard to distinguish from those of *A. fulva.* This variety seems to be very common throughout the State. Their nests have been found under stones.

Genus **Pheidole** Westwood.

1. Epinotum with vestigial spines .....*morrisi* Forel
   Epinotum with spines well developed .....2.
2. Abdomen piceous; head and thorax dark rufous, *crassicornis* Emery
   Abdomen not as above .....3.
3. General body color yellowish .....*tysoni* Forel
   General body color darker .....4.
4. Size larger, 3 mm.-3.5 mm.; workers with coarser, longer and more numerous hairs .....*dentata* Mayr.
   Size smaller 2 mm.-2.5 mm.; workers with hairs smaller and not as numerous .....*vinelandica* Forel

P. morrisi Forel.

The workers are easily separated from those of allied species in having only vestigial spines on the epinotum. Their nests are very characteristic, consisting of a large mound from 4 to 6 inches high and from 6 to 8 inches in diameter, built around the base of a bunch of grass. When distributed the workers run frantically to and fro over the nest.

P. crassicornis Emery.

This species has workers that are distinctly more rufous colored than are those of any other species of this genus, the abdomen is very dark. The writer has found nests of this ant under pavement walks and around the roots of trees.

P. tysoni Forel.

Workers of this shining yellow species have been taken only once. The workers are easily identified from the other workers of this genus by their yellow color and smooth shining appearance.

P. dentata Mayr.

The workers are easily confused with those of *P. vinelandica,* from which they differ in the sculpture of the head and in their larger size. The nests are small crater-shaped affairs; sometimes they nest under stones or logs. The workers store seed in their nests.

P. vinelandica Forel.

The workers of this species are often confused with those of *P. dentata,* from which they differ in their smaller size, less numerous hairs, and the sculpture of the head. They build nests under stones or in the open. The field nests are small crater-shaped mounds only a few inches in diameter. The workers store small grass seeds in their nests.

Genus **Tetramorium** Mayr. Subgenus **Tetramorium** s. str.

T. caespitum L.

This species has been introduced into America from Europe and occurs principally in our large cities. The workers have a striated thorax and head. From their habit of nesting beneath pavement walks they are commonly known as the "pavement ant."

Subfamily DOLICHODERINAE.

1. Chitinous integument hard and brittle; epinotum with declivity strongly concave; principally arboreal in habits, **Dolichoderus**, subgenus **Hypoclinea**
   Chitinous integument thin and flexible ..... 2.
2. Epinotum with a conical elevation; terrestrial species building dome-shaped mounds in sunny spots ..... **Dorymyrmex**
   Epinotum not as above 3

3. Petiole well developed, more or less inclined; workers generally brownish in color; nests usually under stones ...**Iridomyrmex**
Petiole vestigial or absent; workers black .....**Tapinoma**

Genus **Dolichoderus** Lund.

1. Head and thorax with shallow punctures .....2.
Head and thorax coarsely and deeply punctured .....3.
2. Epinotal concavity with a strong median longitudinal ridge; head, thorax and petiole yellowish red; body hairless above,
mariae Forel (Subgenus *Hypoclinea* Mayr)
Epinotal concavity without such a ridge; at least the head black.4.
3. Base of gaster with reddish yellow spots,
plagiatus Mayr (Subgenus *Hypoclinea* Mayr)
4. Body without erect hairs on the upper surface; body and appendages deep black..*taschenbergi* Mayr, var. *atterina*. Whlr.
Body with erect hairs on the upper surface; thorax reddish brown; base of gaster with reddish yellow spots,
plagiatus Mayr var. *pustulatus* Mayr.

D. mariae Forel.

This beautiful species is very common in the State. The workers build nests in the soil at the base of broom straw. The writer has found several thousand workers in a nest. The nest has a peculiar odor. The workers are especially fond of aphids and coccids; they were often found attending the aphis, *Lachnus australis,* on pine. In numbers this species is the most common throughout the State.

D. plagiatus Mayr.

It is very hard to distinguish between the workers of this species and the above. The habits of the two are practically the same. This species is not as numerous as *D. mariae.*

D. plagiatus Mayr, var. **pustulatus** Mayr.

This species is a variety of *D. plagiatus,* from which it differs principally in its smaller size and its numerous coarse punctures on the head and thorax. This variety does not seem to be numerous in the State.

D. taschenbergi Mayr, var. **atterina** Whlr.

This shining black species is very common. The writer has found its nests in the soil at the base of pine trees and in the soil at the base of broom straw. The habits of this species are the same as those of the above two species.

Genus **Dorymyrmex** Mayr.

1. Color dark brown .....2.
   Color not as above, light yellowish .....3.
2. Head and thorax reddish brown, abdomen darker, *pyramicus* Roger
   General color much darker, almost black, *pyramicus* Roger, var. *niger*.
3. Head and thorax reddish yellow; abdomen lighter with darkened tip .....*pyramicus* Roger, var. *flavus* Pergande.

D. pyramicus Roger.

This dark brown species builds crater-shaped nests in sunny spots. It is one of the most numerous ants in the State and is common throughout the southern states. The workers feed on other insects, but are also fond of aphid excretions.

D. pyramicus Roger, var. **niger** Pergande.

This is a much darker form than the above and has not been collected by the writer in the northern part of the State, although it is common in the warmer southern part.

D. pyramicus Roger, var. **flavus** Pergande.

This species is light in color, being reddish yellow with a lighter abdomen. It is also very common throughout the State. The habits of this variety and of *D. pyramicus* are the same.

Genus **Iridomyrmex** Mayr.

1. Color uniform brown; workers when crushed not odorous; imported species found generally in seaport towns, *humilis* Mayr.
   Color of head and thorax brown, abdomen lighter; workers when crushed give off a perceptible *Tapinoma* odor ....*analis* André

I. humilis Mayr.

This species has been imported into the United States from Argentina. It occurs principally in seaport towns. In South Carolina this species has not been found in any other towns than Charleston and Summerville. As a species of economic importance this ant is second to none. The Bureau of Entomology, United States Department of Agriculture, has a large bulletin on the distribution, life history, control measures and other important points of interest concerning this ant.

I. analis André.

The workers of this ant build their nests principally under stones. The ants have a characteristic odor. The workers are

fond of attending plant lice. In one field of rye a large number of this species had their nests in the soil at the base of rye plants, on which occurred the green bug, *Toxoptera graminum,* and were busily attending this species.

Genus **Tapinoma** Förster.

T. sessile Say.

This slender black species builds its nests under stones, leaves and the bark of logs; generally in sunny spots. The workers have a characteristic odor. The pupae are salmon colored. The workers of this form resemble those of *Dorymyrmex pyramicus* in appearance and action. This species may be distinguished from other ants by the presence of a vestigial petiole.

Subfamily CAMPONOTINAE.

1. Workers polymorphic; no ocelli present .....**Camponotus**
   Workers not polymorphic, though often variable in size.....2.
2. Clypeal fossa distinctly separated from the antennal fossa.....3.
   Clypeal fossa confluent with the antennal fossa .....5.
3. Mesonotum not constricted or cylindrical; ocelli present, **Formica**
   Mesonotum constricted .....4.
4. Antennal scapes and tibiae without erect hairs; mesonotum sub-cylindrical; workers nest in moist places...**Prenolepis** s. str.
   Antennal scapes and tibiae with erect hairs; mesonotum constricted but not sub-cylindrical .....Subgenus **Nylanderia**
5. Maxillary palpi six-jointed.....**Lasius** s. str.
   Maxillary palpi three-jointed.....Subgenus **Acanthomyops**

Genus **Camponotus** Mayr.

1. General color of body black .....2.
   General color of body yellow and black, or red and black.....3.
2. Form robust; workers polymorphic; head and thorax sparsely covered with large yellow hairs; the abdomen with numerous large and small hairs, the small hairs giving it a bronzed metallic lustre ....*herculaneus* L., subspecies *pennsylvanicus* DeGeer
   Body slender; head, thorax and abdomen smooth, shining black; body practically devoid of hairs except on the abdomen, where the anterior and posterior edge of each segment bears a fringe of long hairs.....*fallax* Nyl., var. *nearcticus* Emery.
3. Form robust; workers polymorphic; color of body yellow except the head, which is piceous; abdomen with numerous long hairs.....*castaneus* Latr., subspecies *americanus* Mayr.

Form slender; color of head and thorax dark rufous, abdomen black; abdomen with a fringe of long hairs on the posterior edge of each segment.....*fallax* Nyl. var. *decipiens* Emery.

C. hereulaneus L., subspecies **pennsylvanicus** De Geer.

These large black ants are found nesting in wood; because of this fact they are commonly known as the "carpenter ant." The workers of this species seem to be very cosmopolitan, occurring throughout the eastern states. Sometimes they are very injurious to lumber and wooden constructions, through which they construct numerous galleries and chambers.

C. fallax Nyl., var. **decipiens** Emery.

These slender forms with red heads and thoraces and black abdomens are commonly found under the bark of trees or crawling over the surface of the bark. The writer found a large number of workers nesting in an oak gall.

C. fallax Nyl., var. **nearcticus** Emery.

The slender black workers of this species nest under the bark of trees. The habits of the workers are about the same as those of *C. decipiens*. The writer has never found but a few workers in the nests.

C. castaneus Latr., var. **americanus** Mayr.

The workers of this species may be recognized by their yellow bodies and dark piceous heads. They build their nests under stones. These ants are very common in the woods. In size this species ranks with *C. pennsylvanicus*, which is the largest species in the State.

Genus **Formica** Linn.

1. General color of body uniform black; head, thorax and abdomen with fine pubescence, giving a pruinose effect, *fusca* Linn., var. *subsericea* Say.
   General color of body not black, more or less yellowish.....2.
2. Abdomen distinctly darker than the head and thorax, almost black; without hairs, except for the fringe of hairs on the posterior edge of each segment; head and thorax dark rufous, *truncicola*, subspecies *integra* Nyl.
   Abdomen only faintly darker than the head and thorax, which are yellow or yellowish red .....3.

3. Maxillary palpi, especially their last two joints, conspicuously long; color pale yellow; gaster slightly infuscated,
pallidefulva Latr.

Maxillary palpi shorter; color, reddish yellow with more or less infuscated gaster; pubescence and hairs long and abundant,
pallidefulva Latr., var. *schaufussi* Mayr.

F. fusca Linn, var. **subsericea** Say.

The workers of this form are very common in South Carolina. They forage singly, living on the products of the chase. This form is very cowardly and has been made slaves of by other species of this genus.

F. truncicola, subsp. **integra** Nyl.

The robust workers of this species have red heads and thoraces and black abdomens. This species nests in rotten logs. The writer has seen them so numerous in the woods that when the workers were crawling over the leaves it sounded much like rain pattering on the leaves. The workers are very pugnacious when aroused.

F. pallide-fulva Latr.

These ants are very numerous throughout the State, being commonly called red ants. Nests have been found in the soil at the base of trees and in the open field. This species resembles *F. fusca subsericea* in habits.

F. pallide-fulva, Latr., var. **schaufussi** Mayr.

This variety differs from the typical form of the species by having a much more infuscated abdomen. It does not seem to be as common in the State.

Genus **Prenolepis** Mayr.

1. Workers from 3-4 mm. in size; abdomen often distended; color light yellowish, abdomen often darker; nests in moist places.
imparis Say.

Smaller species 1.8-2 mm. in size; color, dark brown to almost black; upper surface of body with prominent coarse hairs,
parvula Emery (Subgenus *Nylanderia* Emery)

P. imparis Say.

This is one of the most numerous species of ants in the State. The workers are very fond of attending aphids. Some of the workers often have their abdomens so distended with

aphid honey dew that they can hardly walk. This species builds crater-shaped nests in moist spots, generally preferring clay soil, probably because of its capacity for holding moisture. The males and females remain in the nest over winter and take their nuptial flight in the spring. The writer has captured both forms in Ohio as early as March 27th. This form occurs around the house, where it often gets into the pantry and causes the housekeeper a great amount of trouble.

P. parvula Emery.

This form is smaller, more hairy, and of a darker color than *P. imparis*. The workers inhabit the fields, where they often build their nests under rocks.

Genus **Lasius** Fabricius.

1. Maxillary palpi six-jointed; general color deep brown. *niger* Linn., var. *americanus* Emery.
   Maxillary palpi three-jointed.....(Subgenus *Acanthomyops*), 2.
2. Petiole low and broad when viewed from above; hairs of the body short .....*latipes* Walsh
   Petiole higher and narrower; abdomen with longer hairs.....3.
3. All but the last joint of the antennae broader than long, *claviger* Roger.
   All but the last joint of the antennae not broader than long; posterior edge of each abdominal segment with a fringe of long hairs .....*interjectus* Mayr.

L. niger Linn., var. **americanus** Emery.

This form is very common in the corn and cotton fields of the State. Professor Forbes, of Illinois, has published several interesting bulletins on this species' relation to the corn and cotton root louse, *Aphis maidi-radicis*. It has been definitely proven that these ants are responsible for the spread of the root louse. The ants are very abundant throughout the United States, except the extreme southern and southwestern sections. The workers have an abdomen with a pruinose appearance, which when crushed gives off a strong formic acid odor. Prof. W. A. Thomas, of South Carolina, has found that the cotton root louse, to a large extent, may be controlled by shallow plowing the growing cotton at frequent intervals, thus disorganizing the ants.

L. latipes Walsh.

This form is found nesting under stones. The females are often dimorphic, one form being peculiar in having much flattened femora and tibiae. The species is not as numerous as *L. interjectus* and *L. claviger*.

L. claviger Roger.

Wheeler states that this is the most common species of the subgenus *Acanthomyops*. The workers build their nests under stones along the edges of woods where they can find warmth and moisture. Solitary deälated females have been found under rocks during the winter.

L. interjectus Mayr.

This is the largest species of the subgenus. The workers build their nests under stones and in old logs. These ants are very fond of attending subterranean aphids. In numbers this is one of the most common species in the State.

Isaac P. Trimble, M.D., Early Economic Entomologist of New Jersey.

By HARRY B. WEISS, New Brunswick, New Jersey.

A trifle over fifty years ago there lived in Newark, New Jersey, a Dr. I. P. Trimble, who was interested in insects from an economic standpoint and whose chief contribution to entomology was a work of 139 quarto pages devoted to the plum curculio and codling moth. This was entitled "A Treatise on Insect Enemies of Fruits and Fruit Trees" and was published in 1865. Ninety-nine pages and eight of the eleven plates in the book are taken up with the plum curculio and this was the most complete account of that insect up to that time.

In the introduction Dr. Trimble states that he studied insects injurious to fruits for many years, at first for the protection of his own crops and later for knowledge that he had been unable to find in books and, in addition, his interest was increased by reading such works as those of Kirby and Spence, Huber, Latreille, Say, Harris and Fitch. From observations

recorded in his book he evidently traveled considerably throughout New Jersey and New York, always keeping a sharp eye open for the plum curculio and codling moth, and recording in a diary such observations on these and various other insects as he thought were worth while. Birds too interested him, as evidenced from several pages of his treatise, which are devoted to them.

He was fully alive to the many valueless remedies proposed at that time for the control of the curculio and kept a collection of them. He states (p. 52 of his Treatise), "I cannot imagine anything of less value, unless it should be a similar collection of quack remedies for consumption or rheumatism." He also experimented somewhat with various materials in order to determine their insecticidal value, and some of these results are recorded in his book. From reading his book one gains the impression that he was interested in all insects more or less, but especially those injurious to crops. Although devoted mainly to the curculio and codling moth, various notes on numerous other species manage to appear, showing that he was widely informed for that period.

In addition to his entomological work, Dr. Trimble evidently found time to practice medicine as the Transactions of the Medical Society of New Jersey for 1866 list his name from Newark as a registered physician in New Jersey, and as late as 1874 his address is given in the Newark City directory as 645 High Street. From 1863 to 1867 he was a member of the New Jersey Historical Society and, according to the proceedings of that society for 1866, was on the library committee and in 1867 and 1871 made donations of books. He was also entomologist of the Horticultural Association of the American Institute and of the State Agricultural Society of New Jersey, and in 1863 made a report to this latter society on the habits of insects injurious to grains and fruits.

He was also interested in politics, being assemblyman to the New Jersey legislature from Essex County in 1859, 1866 and 1869, and chairman of the House Committee on Agriculture in 1866. In the report of the executive committee of the

New Jersey Agricultural Society for 1866 it is stated that the legislature had appropriated $3000 to the society for preparing and publishing Dr. Trimble's "Treatise on the Insect Enemies of Fruit and Fruit Trees," and that this money was to be paid in yearly instalments of $1000, the secretary of the society being required to report annually the manner in which the money was expended. It is further stated that not a cent of this money went to the author, but was used by the society in publishing and purchasing copies of the book for distribution. Eight dollars were asked for a copy with colored plates and five dollars for one without colored plates.

In addition to being the author of Reports by the Committee on Agriculture of the New Jersey legislature for 1866, Dr. Trimble wrote for the newspapers and appeared on the lecture platform of various societies during his time. For the following list of papers by Dr. Trimble I am indebted to Mr. Andrew J. Mutchler, of the American Museum of Natural History. Although aided considerably by the librarians at the Newark Public Library, Rutgers College, New Jersey Historical Society and the State House, it was impossible to find any reference to an obituary notice of Dr. Trimble.

However, at the suggestion of Dr. Philip P. Calvert, I wrote to Dr. Ewing Jordan, editor of the Medical Alumni Catalogue of the University of Pennsylvania, who very kindly and generously supplied me with the following: "Isaac Pim Trimble, son of Samuel and Amy (Pim) Trimble, was born at West Bradford, Chester County, Pennsylvania, on August 20, 1804, and died near Cornwall, New York, September 27, 1890. He entered the Medical School of the University of Pennsylvania in October, 1824, and was graduated with the degree of M.D., April 7, 1826. He was a general practitioner of medicine, having practiced in Chester County, Pennsylvania, but gave a large portion of his attention to fruit culture. He married on March 31, 1841, Jane Riggs, a daughter of Caleb S. Riggs, an attorney-at-law. It is unknown that he had any issue. Sources of information—'Palmer & Trimble Genealogy' and Mr. Gilbert Cope, West Chester, Pa."

Papers by Isaac P. Trimble.

Injurious insects. Proc. Amer. Pomol. Soc., 1864, pp. 93-96. [Habits, ravages, and means against *Carpocapsa pomonella*; habits of *Conotrachelus nenuphar.*]

Spare the toad. [I. P. Trimble] Can. Farmer, 15 August, 1865. S.-b. No. 1, p. 45. [Notes the insectivorous habits of the common toad.]

A treatise on the insect enemies of fruit and fruit trees. N. Y., 1865, 11 pls. [Treats of *Conotrachelus nenuphar* and *Carpocapsa pomonella.*]

Birds; their usefulness: An appeal to farmers and sportsmen. [I. P. Trimble] Newark Advertiser. Can. Farmer, 1 December, 1866. S.-b. No. 2, pp. 51-52. [Notes the usefulness of various birds and of the Ichneumonidae as destroyers of noxious insects.]

Apple Maggot. N. Y. Semi-weekly Tribune, 17 July, 1867. [Distribution of *Trypeta pomonella.*]

An insect talk. Proc. Amer. Pomol. Soc., 1867, pp. 118-121. [Habits of and means against *Conotrachelus nenuphar* and *Carpocapsa pomonella.*]

The plum curculio will deposit in fruit which overhangs water. Amer. Ent. and Bot., February, 1870, v. 2, pp. 119-120. [Facts and arguments to prove that trees planted over water are not protected from *Conotrachelus nenuphar.*]

Radish maggots. Amer. Ent. and Bot., July-August, 1870, v. 2, pp. 273-274. [Abundance of *Anthomyia raphani*; food habits.]

Chip-trap Curculio catching. Amer. Ent. and Bot., July-August, 1870, v. 2, p. 274. [St. Joseph methods applicable in the early days of the season only.]

Occurrence of a European Anthomyiid in Illinois (Diptera).

On August 24, 1917, in company with T. H. Frison, I captured on the shore of Lake Michigan a large series of a very pale colored anthomyiid fly that structurally very closely resembles the common *cilicrura* Zetterstedt. On making a careful examination of the species I identified it as *Phorbia albula* Zetterstedt, a species recorded as occurring on sandy soils in Europe. The species was found on the bare sand along the shore of Lake Michigan, north of Waukegan, and was very common. Owing to its very pale color it was very difficult to see the insect on the dry sand, but large numbers could be taken by sweeping with the net very close to the ground. Along with this species were two others, *Phyllogaster littoralis* Malloch and *Tetramerinx brevicornis* Malloch, both of which were much scarcer than *albula*.—J. R. Malloch, Urbana, Illinois.

ENTOMOLOGICAL NEWS.

PHILADELPHIA, PA., JANUARY, 1918.

The Present Crisis.

When we consider the vast number of deaths from diseases in previous wars, many of which diseases we now know to be wholly or largely diffused by insects; when we reflect on the illness and death borne by these creatures to our civilian population even in times of peace; when we think of the truly enormous injuries inflicted on our crops, our forests, our stored food and our clothing, we must admit that insects exert an influence on civilization that has been totally, or almost totally, ignored by the professed historians of that subject. We must also concede the immense importance of entomological science (1) in discriminating the kinds of insects, for not all of those even closely allied are detrimental to human interests; (2) in elucidating their physiology and life-history, whereby alone we perceive their points of vulnerability, and (3) in learning their relations to the rest of the world and its changes, including its plant and its animal inhabitants. Unquestionably there is very much yet to be learned in all of these fields.

The application of these general conclusions to the present crisis manifestly demands that all the insect problems which in any way touch upon the health and efficiency of the army and of the navy and of the civilian population which stands back of and supports them, should be investigated by men trained in entomological work.

Will we heed and put to good results our previous lessons on insects and human mortality in war?

Knowledge comes but wisdom lingers, and he bears a laden breast
Full of sad experience passing to—the stillness of his rest.

New Color for Clothing Suggested by Butterfly (Lep.).

One of the more than 30,000 butterflies that make up the collection of Prof. Levi W. Mengel, curator of the Reading, Pennsylvania, Museum, auxiliary to the public school system, was used in the development of a new color, woven gray with white, to be exploited shortly by a New York textile firm. Agents of the concern went over the collection and found the shade among specimens that had not yet been placed on exhibition.—*Public Ledger*, Philadelphia, October 30, 1917.

Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded.

The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published.

All continued papers, with few exceptions, are recorded only at their first installments.

The records of papers containing new species are all grouped at the end of each Order of which they treat. Unless mentioned in the title, the number of the new species occurring north of Mexico is given at end of title, within brackets.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

2—Transactions American Entomological Society, Philadelphia. **3**—The American Naturalist. **5**—Psyche. **6**—Journal, New York Entomological Society. **9**—The Entomologist, London. **11**—Annals and Magazine of Natural History, London. **13**—Comptes Rendus, Societe de Biologie, Paris. **76**—Journal, Cincinnati Society of Natural History. **90**—Revue Scientifique, Paris. **99**—Cornell University Agricultural Experiment Station, Ithaca. **161**—Proceedings, Biological Society of Washington. **198**—Biological Bulletin, Marine Biological Laboratory, Woods Hole, Mass. **240**—Maine Agricultural Experiment Station, Orono. **264**—Boletin del Ministerio de Agricultura de la Nacion, Buenos Aires. **355**—Smithsonian Institution Report, Washington, D. C. **404**—Report of the Quebec Society for the Protection of Plants. **447**—Journal of Agricultural Research, Washington. **519**—The Scientific Monthly, Lancaster, Pa. **548**—Physis, Revista de la Sociedad Argentina de Ciencias Naturales. **554**—Quarterly Bulletin, State Plant Board of Florida, Gainesville.

GENERAL SUBJECT. Berlese, A.—Gli insetti loro organizzazione, sviluppo, abitudini e rapporti coll'uomo (Vol. II, fasc. 11-12). **Bouvier, E. L.**—The life and work of J. H. Fabre, **355**, 1916, 587-97. **Drz, A.**—Polyembryonie et determinisme du sexe, **90**, 1917, 596-7. **Felt, E. P.**—Entomological research and utility, **519**, v, 551-3.

Huard, V. A.—Historical notes on entomology in the Province of Quebec, **404,** ix, 54-9. **Jorgensen, P.**—Zoocecidios argentinos, **548,** iii, 1-29. **Lahille, F.**—Nota sobre una larva de insecto de respiracion branquial, **548,** iii, 247-8. **Robertson, C.**—Flowers and insects, XX: Evolution of entomophilous flowers, Botanical Gaz., lxiii, 307-16.

PHYSIOLOGY AND EMBRYOLOGY. Hegner, R. W.—The genesis of the organization of the insect egg, II, **3,** li, 705-18. **Porter, L. T.**—The spermatocytic divisions of Leptocoris haematoloma, **198,** xxxiii, 316-20.

NEUROPTERA, ETC. Longinos Navas, R. P.—Algunos insectos Neuropteros de la Argentina, **548,** iii, 186-96.

HEMIPTERA. Baker, A. C.—Life history of Macrosiphum illinoisensis, the grapevine aphis, **447,** xi, 83-90. **Deletang, L.**—Sobre la presencia de "Belostoma grande L" en Tucuman, **548,** iii, 99. **Lizer, C.**—Description d'une nouvelle espece d'Eriophyde (Eriophyes brethesi). Une nouvelle variete de "Chrysomphalus obscurus" (Coccidae) (Chrysomphalus obscurus var. lahillei). Description du male de "Icerya subandina," **548,** iii, 241-44; 245-7. **Wilson, C. E.**—Some Florida scale-insects, **554,** ii, 2-65.

Knight, H. H.—A revision of the genus Lygus as it occurs in America, north of Mexico, with biological data on the species from New York [many new], **99,** Bul. No. 391. **Osborn & Drake**—Notes on Tingidae [1 new], **5,** 1917, 155-61.

LEPIDOPTERA. Hampson, G. F.—Description of new Pyralidae of the subfamily Pyraustinae, **11,** xx, 369-84 (cont.). **Ihering, R.**—Observacoes sobre a mariposa Myelobia smerintha em Sao Paolo, **548,** iii, 60-8. **Lister, J. J.**—Note on the influence of temperature on the development of pigment in Pieris rapae, **9,** 1917, 241-4.

DIPTERA. Brethes, J.—Description d'une nouvelle espece de moustique de Buenos Aires. Sur une cecidie de "Physalis viscosa": description de la cecidie et de la Cecidomyie, **548,** iii, 226-9; 239-41. **Joan, T.**—Nota sobre un estado larvario del Gastrophilus nasalis, **264,** xxi, 42-5. **Marchand, W.**—Notes on the habits of the snow-fly (Chionea) [European species especially], **5,** 1917, 142-53. Notes on the early stages of Chrysops, **6,** 1917, 149-63. **Serie, P.**—Observacion biologica sobre la culebra aglifa "Liophis poecilogyrus," **548,** iii, 237-8. **Severin, H. H. P.**—Life history, habits, natural enemies and methods of control of the currant fruit fly (Epochra canadensis), **240,** Bul. 264. **Thompson, W. R.**—Sur un diptere parasite des isopodes terrestres, **13,** lxxx, 785-88.

Felt, E. P.—New gall midges [2 new], **6**, 1917, 193-6. **Johnson, C. W.**—A new sp. of Criorhina from New England, **5**, 1917, 153-4. **Metcalf, C. L.**—Syrphidae of Maine, 2d series: Life history studies [1 new], **240**, Bul. 263. **Smith, H. E.**—Five n. sp. North American Tachinidae, **5**, 1917, 137-41. **Townsend, C. H. T.**—Genera of the dipterous tribe Sarcophagini [20 n. g.; 6 n. sp.], **161**, xxx, 189-98.

COLEOPTERA. Bruch, C.—Metamorfosis de Pachyschelus undularius. Insectos mirmecofilos, **548**, iii, 30-6; 141-9. **Frers, A. G.**—Dos palabras mas acerca de las variaciones de "Lema orbignyi" Guer., **548**, iii, 220-3. **Tremoleras, J.**—Sobre cuatro casos teratologicos en coleopteros, **548**, iii, 94-6.

Dury, C.—Synopsis of the coleopterous family Cisidae (Cioidae) of North America [2 n. g., 26 n. sps.], **76**, xxii, 1-27. **Fall, H. C.**—New Dytiscidae [25 new], **6**, 1917, 163-82. **Schaeffer, C.**—On Merium and some blue Callidium [2 new], **6**, 1917, 183-7.

HYMENOPTERA. Brethes, J.—Descripcion de dos nuevos himenopteros de Buenos Aires, **548**, iii, 90-1. **Bruch, C.**—La forma sexuada femenina de "Cryptocerus ridiculus," **548**, iii, 269-70. **Frers, A. G.**—Cuatro himenopteros parasitos de "Pachodynerus argentinus" Saus. o de "Trypoxylon platense" Brethes, **548**, iii, 88-9. **Gallardo, A.**—Notes critiques sur les "Formicides sud-americains nouveaux ou peu connus du Dr. Santschi," **548**, iii, 48-51. **Holmberg, E. L.**—Un caso de mimetismo en las Abejas, **548**, iii, 234-7. **Turner, R. E.**—On Psammocharidae in the Br. Museum, **11**, xx, 357-60.

Cockerell, T. D. A.—Collecting bees in southern Texas [6 new], **6**, 1917, 187-93. **Viereck, H. L.**—New species of No. American bees of the genus Andrena [many new], **2**, 1917, 365-407.

Doings of Societies.

American Entomological Society.

Meeting of October 26, 1917, in the hall of The Academy of Natural Sciences, Philadelphia. Dr. Henry Skinner, President, in the Chair, eight persons present.

Lepidoptera.—Mr. Baylis exhibited specimens of *Chloripe celtis* collected at Perkiomen, Pennsylvania, and some Heterocera collected at Lake Pocono. Mr. Williams made some remarks on the male genitalia of the genus *Thanaos*, and gave the following records of species determined genitalically: *burgessi* (not *brizo*), Jemez Mountains, New Mexico, iv, 27 to v, 24 (Woodgate); *lilius*, Santa Cruz,

vi-6, and Donner Lake, vii-6 (Dodge), California; *juvenalis* (not *propertius*), Jemez Mountains, New Mexico, iv to vi, 25 (Woodgate, and Louisiana, Missouri, v, 21 (Dodge); *propertius*, Salem, Oregon, vi, 26 (Dodge); *clitus*, Garcia, Arizona, v (Biedermann); *terentius*, Tampa, Florida, i, 30 (Williams); *funeralis*, Jemez Mountains, New Mexico, viii, 30 to ix, 15 (Woodgate), and Woodward, Oklahoma, vii, 20 (Dodge). He also called attention to *Thanaos pacuvius* Godman-Salvin (Biol. C. Am. Rhop. T. 91 fig. 17) (not Lintner), which is *scudderi* Skinner.

Mr. Laurent explained an easy and satisfactory method of cleaning greasy Lepidoptera. White blotting paper is placed on each side of the groove of a setting board; the specimen to be cleansed is then placed in position with the under side of the wings resting on the paper. Blotting paper is now placed over the upper surface of the wings, and white twine is wrapped around board, paper and specimen to keep every thing in place. Gasoline is gently poured over the blotting paper, being careful that none gets on the body of the specimen. This specimen is then placed in a box until the gasoline has evaporated, which takes but a few hours. At the end of this time if the grease has not all been absorbed by the blotting paper, the operation should be repeated, using fresh paper. After the second operation, if not the first, we will find our specimen as bright and clean as the day it was captured.

General.– Mr. Rehn spoke on the United States Government's publications on Life Zones, and especially referred to the recently published valuable Report on Life Zones of Wyoming. He remarked on the close affinity between insect forms on the costal strip of California and those of the Sierra Nevada range in that State. Dr. Skinner gave a talk, illustrated by lantern slides, on economic entomology, particularly illustrating the local crusade against mosquitoes.—R. C. Williams, Jr., *Secretary*.

Entomological Section, The Academy of Natural Sciences of Philadelphia.

Meeting of September 27, 1917, Vice Director R. C. Williams, Jr., presiding, nine persons present.

Odonata.—Dr. Calvert spoke of the value of larval exuviae in the study of geographical distribution as they furnish positive data that the species breed where the exuviae are found and are often obtainable when the imagos are not visible. He illustrated these remarks by exhibiting a small collection which he had made at a pond near the ice-house, at an elevation of 3200 feet, on Mt. Greylock, Massachusetts, July 27, 1917, between 2 and 4 p. m. The imagos secured were of 7 species (*Enallagma ebrium, Nehalennia irene, Ischnura verticalis,*

Aeshna interrupta interrupta, Cordulia shurtleffi, Leucorhinia intacta, Sympetrum rubicundulum); only one specimen of the *Aeshna* was captured, although one or two more may have been seen. The exuviae collected were of *N. irene, Ae. interrupta interrupta, L. intacta?* and of two, or possibly three, additional species of *Aeshna*: *umbrosa, canadensis* and something near *interrupta*. He called attention to the interesting position of Mt. Greylock at the southern end of an arm of the Canadian zone, as shown on the map accompanying Prof. A. P. Morse's article on the distribution of New England Locusts (*Psyche*, viii, 315, February, 1899).

Orthoptera.—Mr. Rehn spoke about the collecting trip which he and Mr. Hebard made in Central Florida this summer, and stated that several new forms of the interesting genus *Bellacephala* were found, of which over 350 specimens were collected. Stopping off at Rabun Bald, Georgia, on their way home, some interesting catches in the genus *Conocephalus* were made.

Lepidoptera.– Dr. Skinner exhibited two specimens, supposed to be *Papilio machaonides*, collected in Hayti and Tortugas Island, which showed several marked differences that may prove to be of systematic value; he also spoke about the collection made by Dr. Wm. L. Abbott in these localities this summer. Mr. Williams made some interesting remarks on the genus *Hesperia*, especially regarding characters possessed by the genitalia and illustrated them by drawings. He stated that, based on the genitalic characters, *occidentalis* seems to be distinct from *tessellata*. Mr. Rehn cautioned about the use of the secondary sexual characters in generic separation, making special reference to the costal fold in certain Hesperidae, and illustrated his remarks by reference to some secondary characters that proved not to be even of specific value in Orthoptera.—E. T. Cresson, Jr., *Recorder*.

Entomological Society of Nova Scotia. A Correction.

Editor, *Entomological News*: Last year, with a view of increasing the membership of the Entomological Society of Nova Scotia, I sent copies of the Annual Report to our local members and others, whom I thought might be interested, enclosing a circular letter setting forth the aims and scope of the society. Through a mistake in the mailing department a number of these letters were enclosed with copies going outside the province. This has led to some misunderstanding and the impression has gone abroad that we are soliciting for membership outside the province, which is not the case.

More unfortunately still, a copy of this letter, intended only for residents of Nova Scotia, was published in full in the November, 1917, issue of Entomological News.

I would be glad if you would correct the wrong impression to which this has given rise as, while we are pleased to arrange exchanges with other entomological journals, we are not looking for membership outside the province. The information regarding membership in the society contained in the circular referred to, applies only to residents of Novia Scotia.—W. H. BRITTAIN, *Secretary.*

Feldman Collecting Social.

Meeting of April 18, 1917, at the home of H. W. Wenzel, 5614 Stewart Street, Philadelphia; ten members present. President Wenzel in the chair.

Lepidoptera.—Mr. Laurent said that on his recent trip to Florida. Lepidoptera were abundant but difficult to catch, owing to the absence of flowers; the only species he captured worthy of mention was *Limenitis ursula* Gdt., taken in Levy County, which he has taken before, but not in Florida.

Coleoptera.—The same speaker said he had tried traps, but some animals either licked the molasses out of the jars or dug them completely out of the ground. Mr. H. W. Wenzel said he always thought that *Dynastes tityus* Linn. was found around the roots of trees, but a lady in Southern Pines, North Carolina, where he had just come from, had seen them eating apples and had sent for Mr. Manee, who collected over two hundred and had collected over five hundred on the only ash tree in that part; they fly to the branches, scratch the bark and apparently suck the sap. Mr. G. M. Greene said on his first day in Virginia this year, April 15th, he had collected on Miner's Hill, back of East Falls Church, fourteen specimens of *Pytho planus* Oliv., (*americanus* Kirby) under pine bark; at the same place, April 17th, he had collected in the wagon ruts three specimens of *Tricrania sanguinipennis* Say.—G. M. GREENE, *Secretary.*

Meeting of May 16, 1917, at the same place, seven members present, President Wenzel in the chair.

Lepidoptera.—Mr. Daecke stated that he took a female specimen of *Danais archippus* Fabr. at Rockville, Pennsylvania, April 29, 1017; he said that while it is well known that females of this species return in the spring from the South, the date, April 29th, is remarkably early, and it would seem that this specimen hibernated in the North: he also exhibited a specimen of *Bomolocha tareuta* Grt., taken at Rockville, April 29, 1917, and a specimen of *Plagodis altruaria* Pears., collected by Prof. Sanders at Dauphin, Pennsylvania, April 27, 1917.

Coleoptera.—Mr. H. W. Wenzel said he had taken the usual spring Buprestids on several trips to Malaga, New Jersey, April 22d and 29th and May 7th; species taken included *Chalcophora liberta* Germ., *Dicerca*

punctulata Sch., and *Buprestis ultramarina* Say.—J. W. GREEN, *Asst. Secretary.*

Meeting of June 20, 1917, at the same place, nine members present, President Wenzel in the chair.

Coleoptera.– Mr. Daecke reported taking in numbers *Anthrenus verbasci* Linn. on pink *Spirea* in his garden at Harrisburg, Pennsylvania, on June 18, 1917, and suggested that it would be an economic feature to have *Spirea* growing and collect and destroy this species; also stated that Prof. Sanders had determined the following species of *Lachnosterna*: *L. inversa, tristis crenulata, gibbosa, arcuata, fusca* and *hirticula* feeding on willow at Chestnut Hill, Pennsylvania, June 13, 1917, *L. implicita* at Harrisburg, Pennsylvania, *L. dubia, inversa, fusca, hirticula* and *gibbosa* at Northbrook, Pennsylvania, June 9, 1917, and *L. fusca, dubia, illicis* and *gibbosa* at Punxsutawney, Pennsylvania, June 14, 1917. Dr. Castle reported taking *Brachystilus acutus* at Glasgow, Delaware, June 8, 1917. Mr. Wenzel reported the capture of *Buprestis ultramarina* at Whitneys, New Jersey, May 20, 1917.—FRANK HAIMBACH, *Secy. pro tem.*

Meeting of September 18, 1917, at the same place, eight members present, President Wenzel in the chair.

Lepidoptera.–Mr. H. A. Wenzel spoke of a flight of *Danais archippus* on September 4th at Ocean City, New Jersey; they were flying in a southwesterly direction; toward evening he observed them settling on a tree, and there were so many specimens that the tree was practically obscured. Mr. Daecke exhibited *Brotolomia iris,* which Dr. Castle beat from oak at Linglestown, June 28, 1917, a specimen of *Haematopis grataria* forma *annetaria* Haimbach, taken at Pextang, Aug. 1, 1917, and *Pamphila sassacus,* taken at Inglenook, June 3, 1917, all in Pennsylvania.

Orthoptera.—Mr. Huntington spoke of a plague of locusts that he observed on the outskirts of Pottstown, Pennsylvania, on September 10, 1917; entire fields were cleaned out.

Coleoptera.—Mr. H. W. Wenzel exhibited a collection made this year by himself and son, H. A. Wenzel, of South Jersey Cicindelidae, nearly 300 specimens, 14 species. Among them was the minute form of *C. hirticollis* from Ocean City, August 20th. Dr. Castle reported that collecting has been very poor this year; he had taken *Goes tessellata* at Hayden, Maryland, on June 22, 1917.

Diptera.—Mr. Daecke exhibited *Haematopota punctulata,* collected by Prof. Sanders at Weaver, Pennsylvania, June 24, 1917.—FRANK HAIMBACH, *Secy. pro tem.*

The number of the NEWS for December, 1917, was mailed at the Philadelphia Post Office on December 7, 1917.

An Entomologist's View of the World War

HEADQUARTERS NIGHTS

By VERNON KELLOGG

When the war broke out, Professor Kellogg occupied the chair of entomology at Leland Stanford University. He was a neutral, a pacifist, and an admirer of Germany. In the hope of relieving human suffering, he went to Europe and became special envoy of the Committee for Relief in Belgium at German General Headquarters and at the Headquarters of General Von Bissing in Brussels. For many months he lived on intimate terms with the leaders of the German armies in the West. He worked with them, dined with them, argued with them, heard them expound their creed of the *Allmacht* in defense of their aims and conduct.

Headquarters Nights not only gives an impressive and revolting picture of the workings of German militarism among the people it has crushed, but it meets the exponents of *Kultur* on their own biological ground and turns their own arguments against them. In these "confessions of a converted pacifist," Professor Kellogg concludes that "Germany must be converted to be a good Germany or not much of any Germany at all."

A Book for every thinking American. Handsomely bound in cloth, $1.00 postpaid

THE ATLANTIC MONTHLY PRESS

Three Park Street, Boston Mass.

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This column is intended only for wants and exchanges, not for advertisements of goods for sale. Notices not exceeding three lines free to subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

I have to offer in exchange *Oreta rosea* and var. fresh from pupae, also live pupae of *Papilio asterias*.—FRANK G. SLENTHER, 1705 N. Fremont St., Chicago, Ill.

Wanted for cash or exchange.—Buprestidae and Cerambycidae new to my collection.—J. N. Knull, Hummelstown, Pa.

Wanted.—Beetles from all parts of North America in exchange for Illinois and Indiana beetles.—Carl Selinger, 1338 South 50th Avenue, Cicero, Illinois.

Duplicate Rhopalocera from Japan and Formosa. Desiderata—Those from the world.—S. Satake, No. 48 Aoyamaminamimachi 5 chome Tokyo, Japan.

Cicindelidae Wanted—I wish to obtain for purposes of study, Cicindelas, "tiger beetles," from the Southern and Gulf States. Correspondence desired.—Edwin E. Calder, Longmeadow, R. I.

Wanted—North American Coleoptera for exchange. Please send lists to V. Harnach, 1759 W. 20th St., Chicago, Illinois.

South American Erycinidae and Lycaenidae are offered in exchange for North American moths (Noctuids, Geometers, etc.).—G. Chagnon, P. O. Box 521, Montreal, Canada.

Wanted—Monog. des Buprestides—Kerremans, Vol. II, Pt. 1; Bibliog. Econ. Ent., Pt. IV; Mo. Bul. Cal. Com. Hort., Vol. I, No. 9, and Vol. II, Nos. 3 and 4.—E. A. Klages, Crafton, Pa.

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